1. Simplify the expression below and choose the interval the simplification is contained within.

$$9 - 1 \div 10 * 11 - (20 * 4)$$

A. $[85.3, 89.7]$

B. $[-72.5, -71.4]$

C. $[-71.1, -69.5]$

D. $[-49.3, -47.3]$

E. None of the above

---

2. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\frac{8}{0} + \sqrt{80}i$$

A. Nonreal Complex

B. Not a Complex Number

C. Irrational

D. Rational

E. Pure Imaginary

---

3. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{-45 - 11i}{8 + 4i}$$

A. $a \in [-4.5, -3.5]$ and $b \in [-3.5, -2.9]$

B. $a \in [-7, -5.5]$ and $b \in [-3.2, -2.7]$

C. $a \in [-405.5, -403.5]$ and $b \in [0.9, 1.6]$

D. $a \in [-5.5, -4]$ and $b \in [91.45, 92.9]$

E. $a \in [-5.5, -4]$ and $b \in [0.9, 1.6]$

---

4. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{22}{0}}$$

A. Integer

B. Irrational

C. Rational

D. Not a Real number

E. Whole

---

5. Simplify the expression below and choose the interval the simplification is contained within.

$$1 - 3^2 + 19 \div 15 * 17 \div 16$$

A. $[9.55, 10.63]$

B. $[10.15, 13.6]$

C. $[-7.07, -6.63]$

D. $[-9.06, -7.76]$

E. None of the above

---

6. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(6 - 5i)(-7 - 10i)$$

A. $a \in [-98, -89]$ and $b \in [-25, -21]$

B. $a \in [-44, -40]$ and $b \in [43, 53]$

C. $a \in [-98, -89]$ and $b \in [23, 28]$

D. $a \in [7, 11]$ and $b \in [-95, -92]$

E. $a \in [7, 11]$ and $b \in [88, 96]$

---

7. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(5 - 8i)(-4 + 2i)$$

A. $a \in [-42, -31]$ and $b \in [-23, -21]$

B. $a \in [-6, -2]$ and $b \in [37, 48]$

C. $a \in [-42, -31]$ and $b \in [21, 25]$

D. $a \in [-22, -19]$ and $b \in [-21, -14]$

E. $a \in [-6, -2]$ and $b \in [-47, -35]$

---

8. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{2574}{13}}$$

A. Whole

B. Rational

C. Irrational

D. Not a Real number

E. Integer

---

9. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{-1430}{10}} + \sqrt{154}$$

A. Pure Imaginary

B. Irrational

C. Not a Complex Number

D. Rational

E. Nonreal Complex

---

10. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{36 + 33i}{-2 + 6i}$$

A. $a \in [2.5, 4]$ and $b \in [-282.5, -281]$

B. $a \in [-19, -17.5]$ and $b \in [5, 6.5]$

C. $a \in [-7, -6]$ and $b \in [3, 4.5]$

D. $a \in [125, 127]$ and $b \in [-8, -6.5]$

E. $a \in [2.5, 4]$ and $b \in [-8, -6.5]$
